SECRET [redacted]

25X1

[redacted] 25X1A

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1 APR 1971

MEMORANDUM FOR: Director of Special Activities

ATTENTION: Deputy for Materiel

SUBJECT: Evaluation of New .4 Mil Magnetic Tape for Possible Use in IDEALIST Program

1. This report contains the results of an examination of a sample of .4 mil instrumentation tape 3M Type No. 990. The tape was provided HASC by [redacted] through AVD/M/OSA. Experiments were conducted on certain operational characteristics, with emphasis on handling, cross-talk, tape stretching and pulse drop-out. 25X1A

2. The sample reel contained 14,400 feet of tape, an increase in footage of 5,200 feet over the Type 888 now in use. This additional footage represents a 35 minute increase in high speed recording time (at 30 ips).

a. Handling: Although the leading end of the tape was supplied with a 1.0 mil leader to facilitate initial threading, there was no leader on the other end to aid in rethreading of the recorder (the leader should be supplied for both ends of the tape).

25X1A [redacted] SECRET [redacted] 25X1

GROUP 1
Excluded from automatic downgrading and declassification

b. Cross-talk: With the same record level used for both types of tapes, the following data was derived:

NEW TAPE NO. 990 .4 Mil	No. 888 1.0 Mil
Cross-talk Odd Tracks	Cross-talk Odd Tracks
MDCT* occurred at 3.8 V	MDCT* occurred at 10V
Cross-talk Even Tracks	Cross-talk Even Tracks
MDCT* occurred at 4V	MDCT* occurred at 10V
Cross-talk Odd to Even Tracks	Cross-talk Odd to Even Tracks
MDCT* occurred at 7V	MDCT* occurred at 20V

*MDCT: Minimum Discernible Cross-talk.

The term cross-talk may be a misnomer. The difference noted may have been caused by a change in the transfer characteristics of the 990 tape.

c. Tape Stretching: Because of the thickness of the material, and an increase in elasticity, the 990 tape is prone to stretch considerably more than the Type 888 tape now in use.

d. Pulse Drop-outs: Equipment limitations precluded precise drop-out measurement. However, it appeared that the 990 drop-out rate is no worse than that experienced with Type 888. No head contamination was observed.

3. This tape would be handled with extreme care during operations. Recorders used for operational flights should be checked for inconsistencies in the tape transport mechanisms to insure proper tape passage.

4. The results of the tests indicate that there may be an increase in cross-talk and in handling problems over the Type 888 presently in use. However, the increased recording time is significant and for this reason it is recommended that additional tests be performed at [redacted] and the tapes from such tests be returned to HASC for review.

[redacted]

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DD/S&T